REMARKS

Claim 1 is amended to more particularly point out that the input is applied to the brake pedal, and the rear electrically actuated brake circuit is actuated by a control signal from a controller, see, for example, pedal 22, and controller 16 in Figs. 1. The claim is amended to call out the steps of providing a pedal travel sensor (pedal travel sensor 68 or travel sensor and brake switch 90 in Fig. 6) for detecting the input, and generating a control signal in response to the input, as taught throughout the specification, including with reference to the embodiment in Fig. 5, at page 16, lines 10-20, and features originally recited in claims 4 and 10. Also, the claim is amended to call out the step of monitoring the pressurized fluid and comparing to parameters indicative of normal operation, as taught, for example, at page 14, lines 15-18. The claim is further amended to clarify that the control signal controls the rear brake circuit in a first predetermined relationship when the monitored performance indicates normal operation of the front brake circuit, and is a second predetermined relationship when the monitored performance indicates degradation, page 14, lines 18-27.

Claims 4 and 7 are amended to avoid repetition in view of the amendments to claim 1. Claim 9 is amended for grammar.

Claim 12 is amended to affirmatively recite a brake pedal, a brake travel sensor, and means for monitoring the pressurized fluid in the front brake circuit, similar to the amendments to claim 1. The claim is also amended to more particularly point out that the controller generates a control signal for actuating the rear brake circuit, which control

signal is generated in response to the input detected by the pedal travel sensor, and also compares the pressurized fluid to normal parameters to provide a control signal per a first predetermined relationship when monitored performance is normal, and per a second predetermined relationship when monitored performance is degraded.

Claim Rejection under 35 USC § 103

Claims 1-27 were rejected under 35 U.S.C. § 103 as unpatentable over United States Patent No. 4,629,258, issued to Resch et al. in 1986, or United States Patent No. 5,658,057, issued to Ohnuma et al. in 1997, or United States Patent No. 5,150,951, issued to Leiber et al. in 1992, or United States Patent No. 6,431,661, issued to Isono et al. in 2002, in view of PCT patent application WO 00/66410, published in 2000 by Ross et al.

Each of the primary references shows an exclusively hydraulic braking system in which the rear brakes are hydraulically actuated. However, as acknowledged by the rejection, the primary references fail to show a hybrid brake system in which the rear brakes are electrically actuated, as in Applicants' invention. Rather, the references are understood as cited to show motivation for increasing rear braking force to compensate for a loss of front braking force. Nevertheless, the references do not contemplate an electrically actuated rear braking circuit, and so do not teach or suggest Applicants' invention.

The rejection cites Ross et al. to show an electrical brake circuit for the rear

brakes. At page 6, middle paragraph, Ross et al. teaches that the rear brakes are controlled either by the driver's exertion on the brake pedal or by the brake pressure on the front axle, without specifics or details. The Figure shows a single lead connecting the low-pressure braking force amplifier 10 and the electrically activated actuators 43, 44 at the rear wheels 33, 34. Thus, Ross et al. bases rear wheel braking on a single determining factor. In contrast, Applicants' method generates a control signal to the rear brake circuit based upon brake pedal travel, as detected by a brake pedal travel sensor, and the monitored performance of the front brake circuit based upon the pressurized fluid. The control signal controls the rear braking circuit in accordance with first predetermined relationship when the monitored performance indicates normal operation, and in accordance with a second predetermined relationship when the monitored performance indicates degraded operation. Ross et al. does not suggest using both pedal travel and pressurized fluid in controlling the rear brakes, and so does not suggest Applicants' invention.

Claim 1 is directed to Applicants' method for operating a hybrid brake apparatus with a front hydraulically actuated brake circuit and a rear electrically actuated brake circuit. The primary references describe hydraulic rear brakes, and so are readily distinguished from the claimed method. The claim calls for generating a control signal to the rear brake circuit in response to input detected by a travel sensor. The claim also calls for monitoring the pressurized fluid in the front circuit and comparing it to parameters for normal operation. Ross et al. provides control based upon pedal exertion or brake

pressure, without mention or suggestion of a brake travel sensor. The claim also calls for controlling the rear brake circuit in a first predetermined relationship when monitored performance is normal, and a second predetermined relationship when the monitored performance is degraded. Ross et al. does not monitor the pressurized fluid in the front brakes, and so cannot adjust the control signal in the event of degraded performance. Thus, even when combined with known hydraulic braking systems, as in the primary references, Ross et al. does not point the practitioner to Applicants' method in claim 1.

Claims 3-9 are dependent upon claim 1. Since Ross et al. and the other references do not suggest Applicants' method in claim 1, it follows that they do not show the dependent claims.

Claim 12 is directed to a hybrid brake apparatus that includes a pedal travel sensor and means for monitoring the pressurized fluid in the front brake circuit. The claim also calls for a controller that generates a control signal in response to input detected by the pedal travel sensor, and provides a control based upon a first predetermined relationship when normal operation of the front circuit is indicated, and a second predetermined relationship when degraded operation is indicated. Ross et al. does not show providing control in response to a pedal travel sensor, and adjusting the control signal in response to monitored front brake performance. Thus, even when combined with the exclusively hydraulic brake systems such as shown in the primary references, the combination does not point the practitioner to the hybrid apparatus in claim 12, or in claims 15-23 dependent thereon.

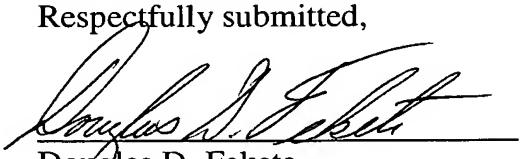
Accordingly, it is respectfully requested that the rejection of the claims 1, 3-9, 12, and 15-23 based upon Resch et al., Ohnuma et al., Leiber et al., and Isono et al. with Ross et al. be reconsidered and withdrawn, and that the claims be allowed.

Conclusion

It is believed, in view of the amendments and remarks herein, that all grounds of rejection of the claims have been addressed and overcome, and that all claims are in condition for allowance. If it would further prosecution of the application, the Examiner is urged to contact the undersigned at the phone number provided.

The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 50-0831.

Respectfully submitted,



Douglas D. Fekete
Reg. No. 29,065
Delphi Technologies, Inc.
Legal Staff – M/C 480-410-202
P.O. Box 5052
Troy, Michigan 48007-5052

(248) 813-1210